The TRIUMPH Corporation

SERVICE BULLETIN

May 4, 1965 65/5

TO ALL EASTERN TRIUMPH DEALERS:

USE OF TRIUMPH ELECTRICAL TEST SET MODEL 102

Instructions for Testing Lucas RM19 Equipment Fitted to Both "B" and "C" Range 1963-65 (6 VOLT) Battery Ignition Triumph Twin Models. (These instructions do not apply to 1964-65 Thunderbird (6T) Model which has a 12 VOLT system. Use your Test Set and Workshop Manual CD411 for testing 6T.

CAUTION: If battery connections are reversed the rectifier and rotor can be damaged.

Test No. 1 Testing charge rate (D.C. current in-put to battery).

1. Plug Black test lead into Yellow Socket (AMPS). Position test set toggle switch for Test No. 1 (D.C. AMPS).
2. Disconnect positive side of battery by removing fuse (or remove red ground wire at (+) battery terminal).
3. Connect COMMON Red Test lead to a good ground on motorcycle frame.
4. Connect Black test lead (AMPS) to battery positive terminal.
5. Start engine and check maximum readings according to Light Switch position shown below. (Engine speed approximately 3,000 RPM, a fast idle).

LIGHT SWITCH POSITION	TEST METER READING
Off	2.0 AMPS
Pilot	1.4 "
Head	1.1 "

Above readings are normal. All readings with switch in "Head" position are with the dip switch in high beam position. All lights normally fitted should be in working condition. If extra lights are fitted, meter readings will be reduced accordingly.

NOTE: Low or no out-put can be due to faulty battery, defective alternator, defective rectifier, poor or incorrect wiring and connections, defective ammeter, defective ignition switch, or defective light switch.

Proceed to Test No. 2 if the above D.C. Current readings are not obtained.

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RM19 Electrical Test

Test No. 2 Testing A.C. voltage out-put of alternator You are reading A.C. VOLTS on the meter for this test.

1. Reconnect motorcycle wiring as normal.

2. Plug Black test lead into Black Socket (VOLTS). Position test set toggle switch for Test No. 2 (A.C. VOLTS with 1 Ohm Load).

3. Disconnect the three alternator wires, White/Green, Green/Yellow and Green/Black from the alternator side of the alternator cable junction block.

4. Start engine and connect test leads to wires as shown below. At a fast idle (approximately 3,000 RPM), the following A.C. voltage readings should be obtained.

Connect Black Test Lead to:	Connect Red (COMMON) Test Lead to:	A.C. Voltage
Green/Black	White/Green	4.5 VOLTS
Green/Yellow	White/Green	7.4 "
Green/Black & Green/Yellow (CONNECTED TOGETHER)	White/Green	9.6 "

NOTE: Low readings on any of the above three TESTS indicate grounded or shorted coils in the A.C. stator assembly. Zero readings indicate open circuit, broken wires, or shorted coils. Remove and clean stator using TRI-COR Metal Cleaner and compressed air. Repair any obvious wire breaks, or replace stator assembly.

5. With engine running, connect Red (COMMON) test lead to ground and connect Black test lead to each of the three alternator wires in turn. There should be no reading between any one wire and ground. ANY reading indicates "grounded" stator coils or cable and the stator assembly must be repaired, or be replaced. Old stator can be sent in with your parts order to obtain a new replacement at "Exchange"price.

If A.C. Voltage readings check O.K., proceed to Test No. 2A.

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RM19 Electrical Tests

Test No. 2A Testing rectifier. Using No. 2 Test position of the toggle switch, you are reading D.C. VOLTS on the meter for this test No. 2A.

1. Reconnect motorcycle wiring as normal.
2. Position Test Set toggle switch for Test No. 2 (D.C. VOLTS, 1 Ohm Load).
3. Disconnect Brown/White colored wire from middle rectifier terminal.
4. Un-plug Green/Yellow alternator wire from alternator side of junction block.
5. Make a separate wire connection from this Green/Yellow alternator wire to top rectifier terminal. (This terminal has the Green/Black wires attached).
6. Connect Red (COMMON) Test lead to a good ground on the motorcycle frame.
7. Connect Black test lead to middle rectifier terminal.
8. Start engine and look for maximum indicated voltage of 8.0 to 10.0 volts; (at fast idle, approximately 3,000 RPM). If this reading is obtained, it proves that the rectifier is O.K.

NOTE: If no reading or low reading is found check rectifier for good ground to motorcycle frame. If no reading or low reading persists, replace rectifier and re-check. When fitting a new rectifier (Part #49072) always hold the top hexagon bolt head (above the top plate) when tightening the bottom fixing nut.

SUMMATION:

By means of these simple tests, each of the three major electrical components of the RM19 set can be determined to be positively good, or in need of replacement.

Should electrical trouble persist, check by substituting one at a time, the ammeter, lighting switch, ignition switch, and wiring harness.

Remember, that the entire system depends upon a good ground connection at the battery and that the battery itself must be in good condition. If there is any doubt about battery condition, for test purposes use a battery that is known to be O.K.

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The following Service Bulletins can be helpful to you when dealing with electrical equipment fitted to earlier Triumph Models.

Bulletin #59/18 Test Set Instructions RM13 (Early Cub Models).
" #59/19 " " " RM14 and RM13/15 (Early Twin Models).
" #59/20 " " " Lucas D.C. Generators and Regulators.
" #62/12 "A" Range Wiring Chart showing color codes and switch connections.
" #62/13 "B" " " " " " " " " " .
" #62/14 "C" " " " " " " " " " .
" #65/2 Lucas Stator and Rotor Identification (Equipment fitted to Triumph Models - 1954 thru 1965).

The Triumph Workshop Manual (part #CD411) can be used to very good advantage in conjunction with your Test Set as follows:

1. Ignition coil testing - continuity tests - pages H3 thru H6.

2. Testing charge rate, alternator out-put, testing rectifier, testing Zener Diode - pages H8 thru H13.

3. Testing A.C. Ignition Models - pages H15 - H16.

4. Complete wiring diagrams for all Triumph Twins will be found on pages H19 thru H22.

5. A table listing alternator and stator details and out-put figures, page H23. Make the following correction on page H23 opposite "alternator out-put" for #47188 stator - column "A" is O.K., 5.0 VOLTS A.C. Column "B" should read 2.0 VOLTS A.C., column "C" should read 5.0 VOLTS A.C.

POOR RUNNING SYMPTOMS

Refer to Bulletin #10 - May 11, 1965 for proper ignition timing procedure.

Refer to Bulletin #8 - June 18, 196 for tracking down poor running symptoms due to blown fuse, or due to possible ammeter failure.

Loose switch sockets have been reported as a cause of various electrical problems including blown bulbs. Each pin on each switch must be a tight fit in it's respective brass socket. Socket diameter can be gauged by using a length of 3/32" welding rod. (.093" dia.) For good electrical contact this .093" dia. rod must be a tight fit in each brass socket.